

ABSTRACT

[0057] A method of fabricating quantum features on a substrate from a layer of material selected from materials identified in the III-V periodic groups (e.g., silicon (Si), I_nP , Si-Ge, and the like) uses sequentially two patterned masks, each mask includes an elongated mask pattern disposed substantially orthogonal to the elongated pattern of the other mask. In one embodiment, the method forms on a semiconductor wafer a plurality of quantum dots having topographic dimensions of about 30 nm or less. In another embodiment, the invention may be halted after a first etch process to form quantum lines.